

Executive Order G-70-70-AC

Exhibit 4

Specifications for Healy System with Central Vacuum Unit
(Model 8500 Multi-Jet or 9000 Mini-Jet)

Drawings of typical installations of Healy vapor recovery systems with a central vacuum unit are shown in Figures 4-A, 4-B, 4-C, 4-D, 4-E, 4-F and 4-G.

Nozzles

1. Systems with a central vacuum unit for which the normal operating range of the vacuum level is -30" to -40" water column may be used only with Model 200 nozzles. Systems with a central vacuum unit for which the normal operating range of the vacuum level is -60" to -80" water column may be used with Model 400 or Model 200(X) nozzles. 200(X) designates Model 200 nozzles which have been modified, by the manufacturer or designated representative only, to operate properly at the higher vacuum level setting. These nozzles have an "X" stamped on the nozzle body following the serial number.
2. Leaded and unleaded nozzle spouts are interchangeable.
3. The nozzle must shut off at a vacuum of -10 inches water column or less and at a pressure of +10 inches water column or greater.
4. Flow rate is limited to 10 gallons or less per minute.
5. The normal operating range in the nozzle boot is -1/4 inch water column to zero (atmospheric pressure). Readings taken during a fueling of at least ten gallons, excluding the first gallon and the last gallon dispensed, should be relatively stable. Fluctuations (except during the first or last gallon) indicate a defective nozzle. A vacuum of -1/2 inch or more, or a pressure of 1/4 inch or more, indicate a defective nozzle or system. (Note: vacuum or pressure levels outside of the specified range may occur when properly functioning equipment is affected by the following conditions. Gasoline dispensed into a vehicle fuel tank which is significantly warmer than the dispensed fuel may cause a vacuum of several inches. Conversely, gasoline dispensed into a vehicle tank which is significantly cooler than the dispensed fuel may temporarily cause pressure as high as 1/2 inch water column. The effects of temperature differential will be most pronounced at the beginning of the fueling operation and tend to gradually disappear toward the end of the fueling operation.)

Central Vacuum Unit

1. Gasoline that flows to the Multi-Jet must be first strained by a filter approved by the manufacturer. The Mini-Jet is direct-coupled to the submerged turbine pump and it has a factory-installed strainer.

2. Any installation with a central vacuum unit which was installed after July 1, 1992, must incorporate a vapor flow control mechanism designed to allow the vapor return line from the dispenser to the central vacuum unit to open only when product dispensing is initiated. The approved vapor flow control mechanisms are listed in Exhibit 1 of this Order. Either the CX6 vapor adaptor or the flow control valve may be used to meet the requirement of this section; the use of both together is neither required nor prohibited. The CX6 vapor adaptor shall be installed as shown in Figure 4-A. The flow control valve shall be installed as shown in Figures 4-F and 4-G.

Coaxial Hose

1. The length of the coaxial hose shall not exceed 13 feet.
2. A swivel is required on the nozzle end of the coaxial hose. A swivel on the dispenser end of the coaxial hose is optional.

Model 143 Control Valve

1. The Healy Model 143 control valve is included with the Model 9000-02 Mini-Jet to prevent siphon loss when the pump is turned off. The Model 8500 Multi-Jet and the Model 9000-001 Mini-Jet do not have built-in siphons. These units may be installed only when the submerged turbine has a siphon available for gasoline condensate removal.

Vapor Line

1. All vapor return lines must be sloped 1/8 inch per foot minimum.
2. The riser must be 16 inches or longer and have an inside diameter of no less than 3/4 inch. One-inch inside diameter riser is required with multi-product dispensers. Locate the 1-inch riser with double swing connection to the 2-inch run for best mounting position inside a multi-product dispenser. Allow for 1/2-inch outside diameter copper gasoline tie-in to the regular or lowest octane riser. When a swing joint is used in a riser containing a shear connection, the riser must be rigidly supported.
3. All vapor return and vent piping shall be provided with swing joints at each tank connection, and at the base of the vent riser where it fastens to a building or other structure.

Tank Vents

1. Vent pipes shall be adequately supported throughout their length and when they are supporting weights in addition to their own, additional supports may be required; anchor to building or other structure.
2. Tank vent pipes shall be manifolded at a height not less than 12 feet above the driveway surface used for Phase I tank truck filling operations. A single vertical outlet pipe above the manifold shall be equipped with a pressure/vacuum (P/V) valve. The P/V valve shall be Board certified at a pressure setting of 2 to 3 inches water column and

a vacuum setting of -1/2 ounce (-0.8") to -8 inches water column. For systems installed before July 1, 1992, and for which the normal operating range of the vacuum level is -15" to -40" water column, a Board certified P/V valve with a pressure setting of 1 inch may be used. The outlet shall vent upward and be located to eliminate the possibility of vapors accumulating or traveling to a source of ignition or entering adjacent buildings.

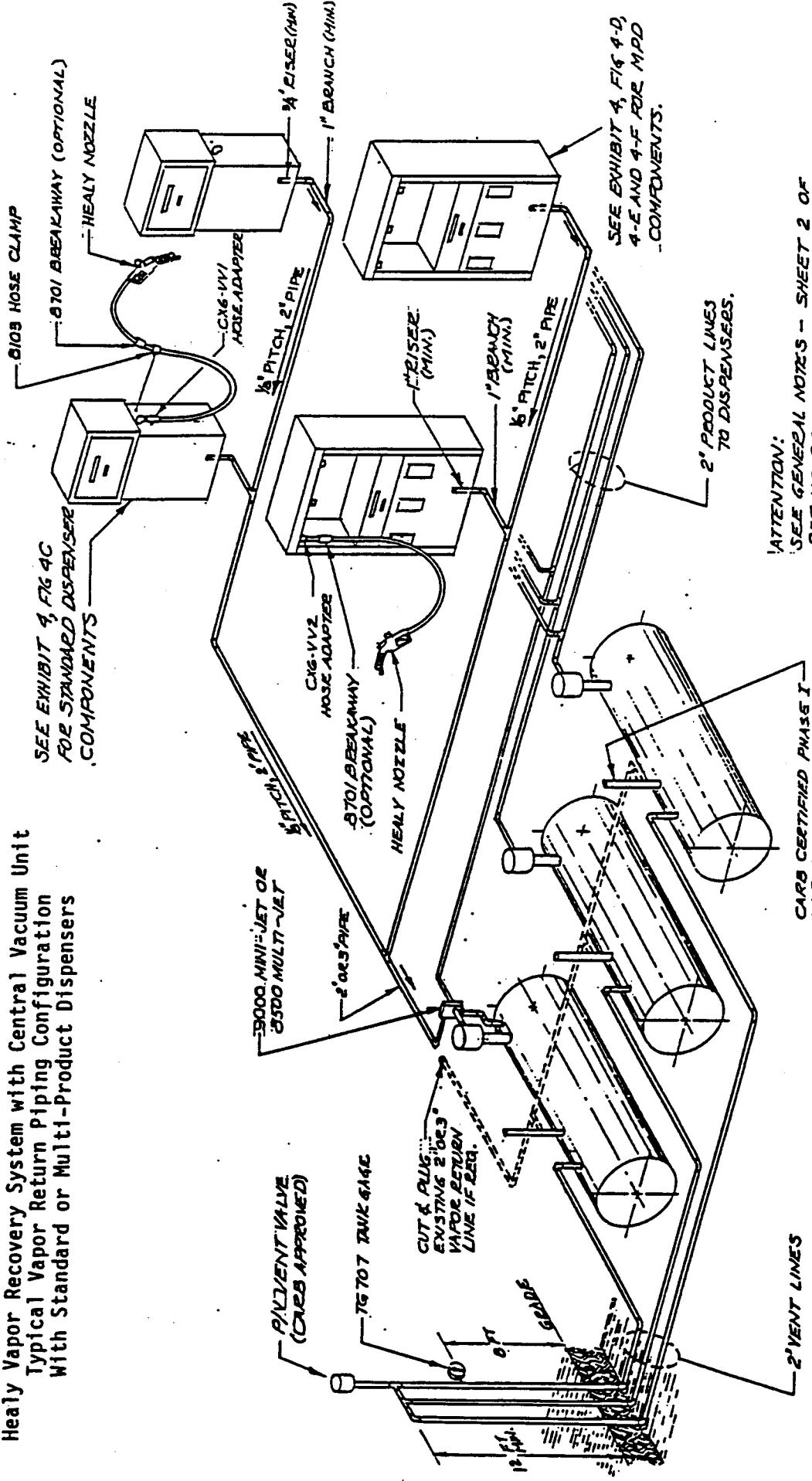
3. A Board-approved or district-approved leak test is recommended for all new or modified installations. In addition to any tests which may be required by the local district, the following requirements are made a condition of certification for any installation with a central vacuum unit which was installed or modified to increase the vacuum level setting after July 1, 1992, or for any installation with a central vacuum unit for which the normal operating level is -40" water column or greater. The owner or operator of the installation shall conduct the leak test in Exhibit 5 of this Order at least once in each twelve month period. Test results which demonstrate that the installation is leak free as specified in Exhibit 5 shall be submitted to the local district. The local district may impose more stringent test frequency requirements or test procedures.

Executive Order 6-70-70-AC

Figure 4-A

**Healy Vapor Recovery System with Central Vacuum Unit
Typical Vapor Return Piping Configuration
With Standard or Multi-Product Dispensers**

**SEE EXHIBIT 4, FIG 4C
FOR STANDARD DISPENSER
COMPONENTS**



REVISIONS		DATE	DRAWN BY
ITEM	DESCRIPTION		
1	A0G. ISSUE	6/19/82	JMH

DO NOT SCALE THIS DRAWING		HEALY SYSTEMS, INC. 17 Hampshire Drive Holden, New Hampshire 03541 PHONE C 9000-928
SCALE ~	NO SIGHT	
CON	CON	Sheet 1 of 2
PRINT ALL SHARP CORNERS UNLESS OTHERWISE SPECIFIED		ORIGINAL ISSUE DATE DRAWN BY/JMH DATE CHECKED BY/ANNEE DATE APPROVED BY/EE DATE SUBMITTED BY/C. INC. DATE HEAT TREATMENT TEMP PROTECTIVE FINISH

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVAL
A	DRW: /AS/LE	9/13/92	JAN

Executive Order G-70-70-AC

Figure 4-B

Healy Vapor Recovery System with Central Vacuum Unit
Notes to Accompany Figure 4-A

GENERAL NOTES

1. TEST ALL VAPOR PIPING FROM DISPENSER TO TANK PER HEALY VAPOR RETURN TIGHTNESS TEST PROCEDURE AND DWG. 9901-111 ATTACHED.
2. THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. THIS PLAN SHOWS A GENERAL ARRANGEMENT AND IS INTENDED AS A GUIDELINE FOR TYPICAL SINGLE, DUAL, OR MULTIPRODUCT DISPENSERS USING CENTRAL VACUUM VAPOR RECOVERY EQUIPMENT. THE GENERAL ARRANGEMENT SHALL BE MODIFIED TO SUIT INDIVIDUAL INSTALLATION AND CONDITIONS AND IS NOT TO BE USED FOR ACTUAL DESIGN AND INSTALLATION.
3. INSTALLATION SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS SPECIFIED HEREIN, CALIFORNIA AIR RESOURCES BOARD REGULATIONS, CALIFORNIA STATE FIRE MARSHAL REGULATIONS, SUB-CHAPTER 11.5 AND LOCAL APCD RULES.
4. ALL PIPING AND FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS. METAL PIPE SHALL BE MINIMUM SCHEDULE 40 WELDED OR SEAMLESS STEEL PIPE PER ASTM A-53, GALVANIZED, AND FITTINGS SHALL BE 150# SCREWED MALLEABLE IRON, GALVANIZED. ALL NON-METALLIC PIPE AND FITTINGS SHALL BE UL APPROVED.
5. VAPOR RETURN LINES AND VENT LINES TO BE 2" DIAMETER PIPE UNLESS OTHERWISE NOTED. SLOPE MUST BE MINIMUM 1/8" PER FOOT, WITHOUT SAGS OR TRAPS. DRAINING UNIFORMLY TOWARD PRODUCT STORAGE TANK.
6. VENT LINES MUST BE SEPARATED BY PRODUCT.
7. ALL VAPOR PIPING TRENCHING MUST BE COMPACTED TO 90% UNDISTURBED SOIL BEFORE THE PIPES ARE INSTALLED AND BACKFILLED WITH SAND AT LEAST SIX INCHES BELOW AND ABOVE THE PIPING.
8. THE VAPOR RETURN PIPE SHOULD ENTER A SEPARATE UNDERGROUND TANK OPENING FROM THAT CONNECTED TO THE VENT PIPE OR STAGE 1 PIPING.
9. PRESSURE/VACUUM VALVE #802-21 OR EQUAL SHALL BE INSTALLED ON VENT PIPE.
10. VENT PIPES SHALL BE MANIFOLDED AT MINIMUM HEIGHT OF 12 FEET ABOVE DRIVEWAY LEVEL.
11. TANK GAGE SHALL BE INSTALLED 8 FEET ABOVE DRIVEWAY LEVEL.

DO NOT SCALE THIS DRAWING	
PRINT ALL SHARP CORNERS	
LEAVE ALL DIMENSION SPACES	ORIGINAL ISSUE
UNLINED	DATE
PRINTED IN INCHES	PRINTED 7/27/92
INCHES	DATE 9/13/92
INCHES	APPROVED
INCHES	SUPERVISOR
INCHES	DATE
INCHES	REVIEWED
INCHES	DATE
INCHES	INITIALS
INCHES	C.I. INC.
INCHES	CLINTON

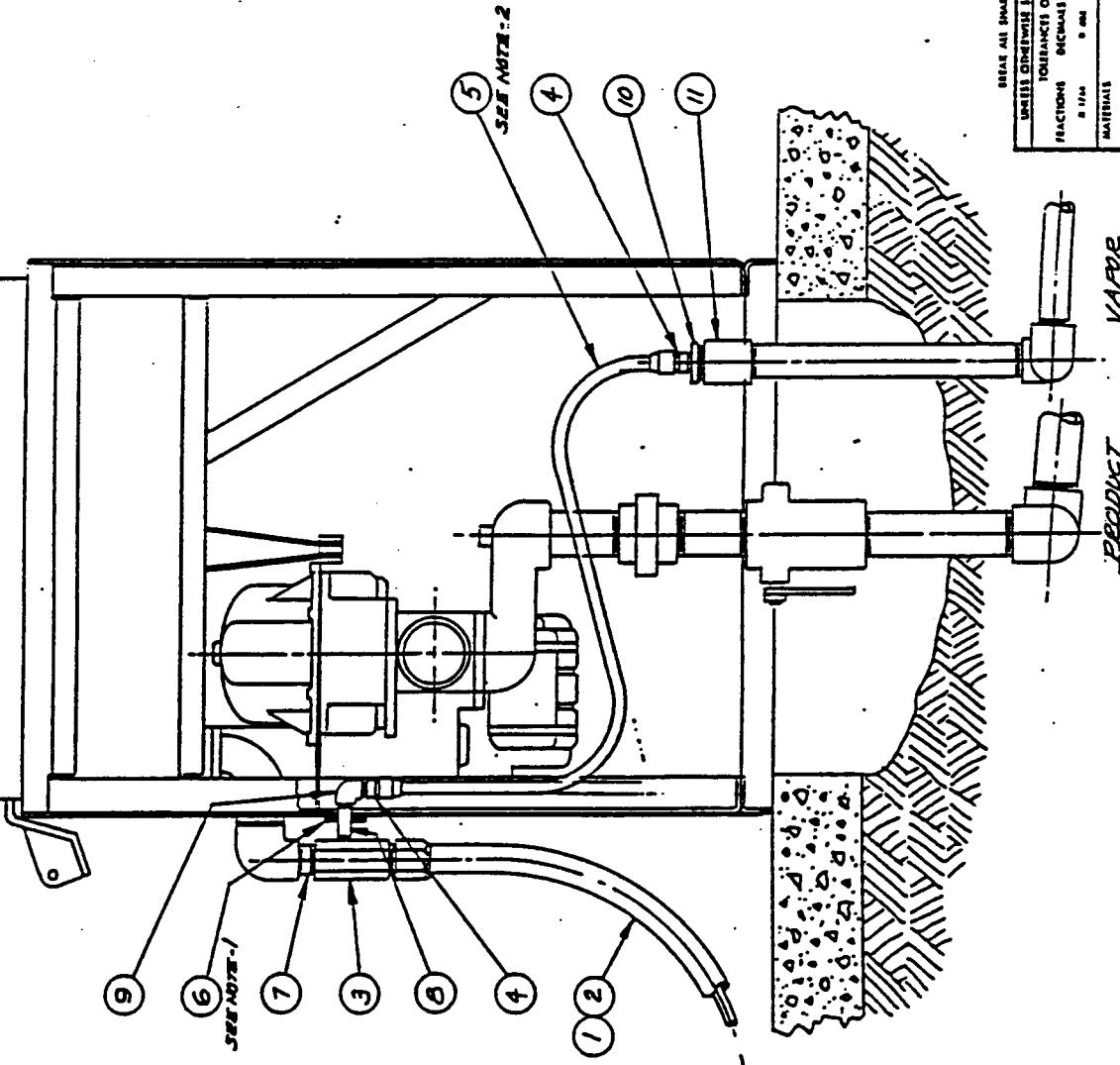
HEALY SYSTEM PIPING	GENERAL NOTES
17 Hanover Street, Boston, MA 02108 Phone 617-520-0011 Fax 617-520-0011	COPYRIGHT © 1992 HEALY SYSTEMS, INC.

HEALY
SYSTEM
INC.
44-93011
COPYRIGHT © 1992 HEALY SYSTEMS, INC.

Executive Order G - J-70-AC

Figure 4-C

**Healy Vapor Recovery System with Central Vacuum Unit
Typical Installation of Dispenser Components
With Standard Dispenser**



PARTS LIST		REVISIONS
ITEM	QTY	DESCRIPTION
A	1	ITEM 3 WAS Q-617221 J-BAG 8 NO. 58 11/15/71
B	1	ITEM 4-17221 J-BAG 8 NO. 58 11/15/71
C	1	ITEM 5-17221 J-BAG 8 NO. 58 11/15/71
D	1	ITEM 6-17221 J-BAG 8 NO. 58 11/15/71
E	1	ITEM 7-17221 J-BAG 8 NO. 58 11/15/71
F	1	ITEM 8-17221 J-BAG 8 NO. 58 11/15/71
G	1	ITEM 9-17221 J-BAG 8 NO. 58 11/15/71
H	1	ITEM 10-17221 J-BAG 8 NO. 58 11/15/71
I	1	ITEM 11-17221 J-BAG 8 NO. 58 11/15/71
J	1	ITEM 12-17221 J-BAG 8 NO. 58 11/15/71
K	1	ITEM 13-17221 J-BAG 8 NO. 58 11/15/71
L	1	ITEM 14-17221 J-BAG 8 NO. 58 11/15/71
M	1	ITEM 15-17221 J-BAG 8 NO. 58 11/15/71
N	1	ITEM 16-17221 J-BAG 8 NO. 58 11/15/71
O	1	ITEM 17-17221 J-BAG 8 NO. 58 11/15/71
P	1	ITEM 18-17221 J-BAG 8 NO. 58 11/15/71
Q	1	ITEM 19-17221 J-BAG 8 NO. 58 11/15/71
R	1	ITEM 20-17221 J-BAG 8 NO. 58 11/15/71
S	1	ITEM 21-17221 J-BAG 8 NO. 58 11/15/71
T	1	ITEM 22-17221 J-BAG 8 NO. 58 11/15/71
U	1	ITEM 23-17221 J-BAG 8 NO. 58 11/15/71
V	1	ITEM 24-17221 J-BAG 8 NO. 58 11/15/71
W	1	ITEM 25-17221 J-BAG 8 NO. 58 11/15/71
X	1	ITEM 26-17221 J-BAG 8 NO. 58 11/15/71
Y	1	ITEM 27-17221 J-BAG 8 NO. 58 11/15/71
Z	1	ITEM 28-17221 J-BAG 8 NO. 58 11/15/71

NOTES: 1-MAKE $\frac{3}{4}$ " O.D. HOLE TO PASS THROUGH $\frac{3}{4}$ " NIPPLE. ATTACH WASHER (17221-6) AROUND MAKING UP NIPPLE TO HOSE ADAPTER.
2-CUT & INSTALL TUBING (17221-5) TO ADJUST ANY POSSIBILITY OF KINKING.

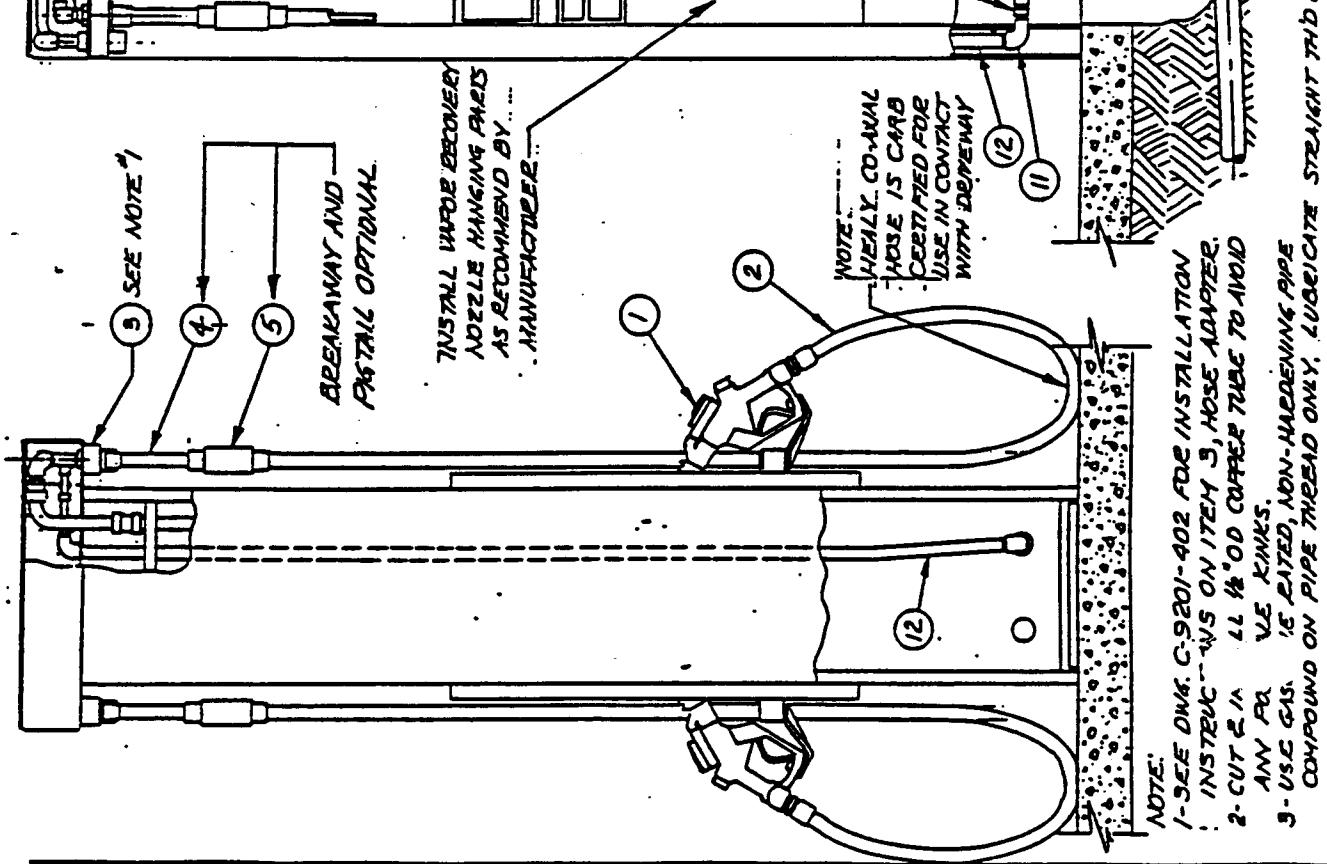
DO NOT SCALE THIS DRAWING		HEALY SYSTEM		INSTALLATION	
UNLESS OTHERWISE SPECIFIED		OPTIONAL ISSUE	BATCH	BATCH	BATCH
FRACTION	TOLENCES ON	ITEM	DATE	ITEM	DATE
A	ITEM 1	ITEM 1	11/15/71	ITEM 2	11/15/71
B	ITEM 3	ITEM 3	11/15/71	ITEM 4	11/15/71
C	ITEM 5	ITEM 5	11/15/71	ITEM 6	11/15/71
D	ITEM 7	ITEM 7	11/15/71	ITEM 8	11/15/71
E	ITEM 9	ITEM 9	11/15/71	ITEM 10	11/15/71
F	ITEM 11	ITEM 11	11/15/71	ITEM 12	11/15/71
G	ITEM 13	ITEM 13	11/15/71	ITEM 14	11/15/71
H	ITEM 15	ITEM 15	11/15/71	ITEM 16	11/15/71
I	ITEM 17	ITEM 17	11/15/71	ITEM 18	11/15/71
J	ITEM 19	ITEM 19	11/15/71	ITEM 20	11/15/71
K	ITEM 21	ITEM 21	11/15/71	ITEM 22	11/15/71
L	ITEM 23	ITEM 23	11/15/71	ITEM 24	11/15/71
M	ITEM 25	ITEM 25	11/15/71	ITEM 26	11/15/71
N	ITEM 27	ITEM 27	11/15/71	ITEM 28	11/15/71
O	ITEM 29	ITEM 29	11/15/71	ITEM 30	11/15/71
P	ITEM 31	ITEM 31	11/15/71	ITEM 32	11/15/71
Q	ITEM 33	ITEM 33	11/15/71	ITEM 34	11/15/71
R	ITEM 35	ITEM 35	11/15/71	ITEM 36	11/15/71
S	ITEM 37	ITEM 37	11/15/71	ITEM 38	11/15/71
T	ITEM 39	ITEM 39	11/15/71	ITEM 40	11/15/71
U	ITEM 41	ITEM 41	11/15/71	ITEM 42	11/15/71
V	ITEM 43	ITEM 43	11/15/71	ITEM 44	11/15/71
W	ITEM 45	ITEM 45	11/15/71	ITEM 46	11/15/71
X	ITEM 47	ITEM 47	11/15/71	ITEM 48	11/15/71
Y	ITEM 49	ITEM 49	11/15/71	ITEM 50	11/15/71
Z	ITEM 51	ITEM 51	11/15/71	ITEM 52	11/15/71

ITEM	NO. 100's	CODE	PHOT.
C	8502 - 1/24		

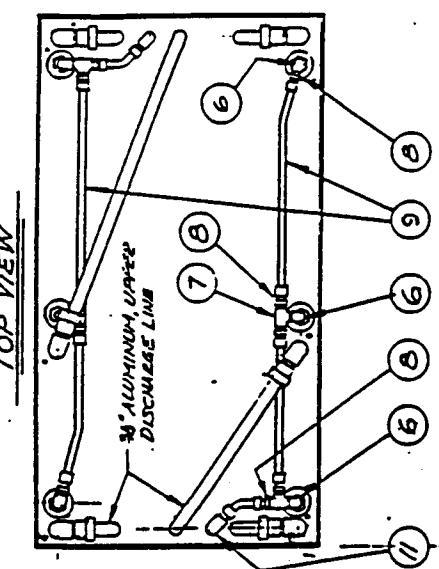
ITEM	NO. 100's	CODE	PHOT.

Executive Order G-70-10-AC

Figure 4-D
Healy Vapor Recovery System with Central Vacuum Unit
Typical Installation of Dispenser Components
With Multi-Product Dispensers



REVISIONS		DATE	
REV	A	DATE	AMT/4 4/1/72 JAN



PARTS LIST		PN
ITEM	QTY	DESCRIPTION
1	6	NOZZLE
2	6	CO-AXIAL HOSE - 750-100-322E2
3	6	HOSE ADAPTER
4	6	RIGHT/L. : 7750-008-022
5	6	BREAKAWAY (OPTIONAL)
6	6	1/4" ELBOW (GALV.)
7	5	1/4" TEE (GALV.)
8	16	FLARE COM (1/2" X 1/4" MP)
9	15	1/2" OD COPPER TUBE
10	11	1/4 CLOSE NIPPLE
11	4	1/4" X 1/2" REDUCING FLC (GALV.)
12	25	1/2" SWD. TO STZ FPC (GALV.)
13	1	1/4" X 1" REDUCING COUP (GALV.)

SCAM	~	NO HOLE	SCAM	~	NO HOLE
CAMBRIDGE ENGINEERING, INC. SYSTEMS, INC.	HEALY	MADE	MADE	MADE	MADE

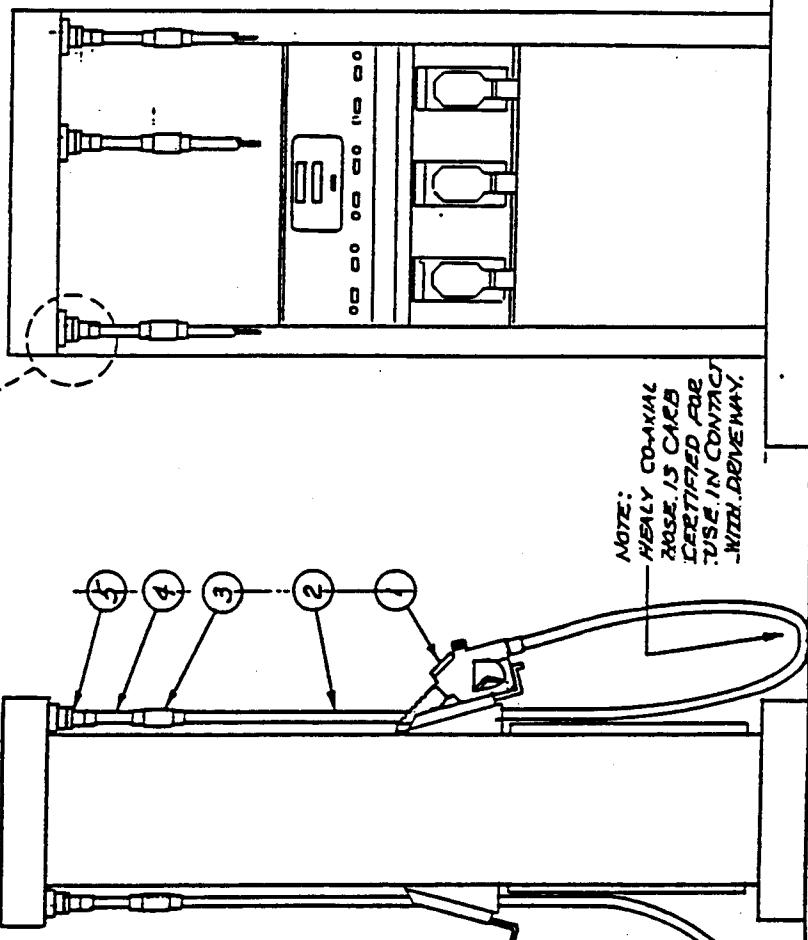
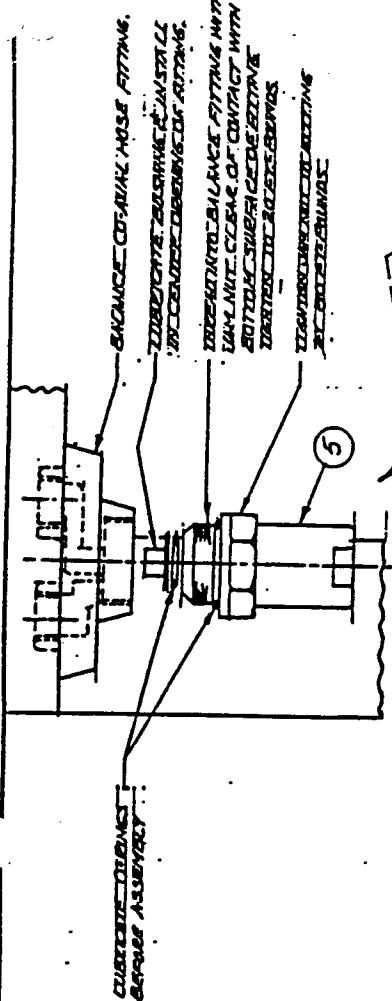
9201-403

ITEM	DESCRIPTION	DATE	REV.
1	Oct. / ISSUE	1-23-72	JAW

Executive Order 6-70-70-AC

Figure 4-E

Healy Vapor Recovery System with Central Vacuum Unit
Typical Installation of Dispenser Components
With Balance Vapor-Ready Multi-Product Dispensers



ITEM QTY	DESCRIPTION	P/N
1	1 NOZZLE	400
2	6 HOSE 75B-100-32-2	-
3	6 COAXIAL	0701
4	6 BAIL	707
5	6 HOSE ADAPTER	01612

DO NOT SCALE THIS DRAWING

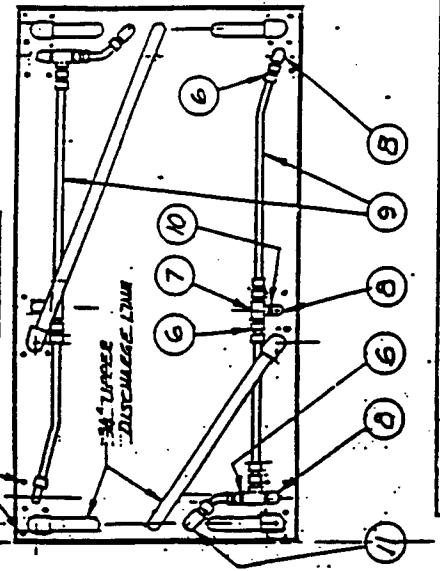
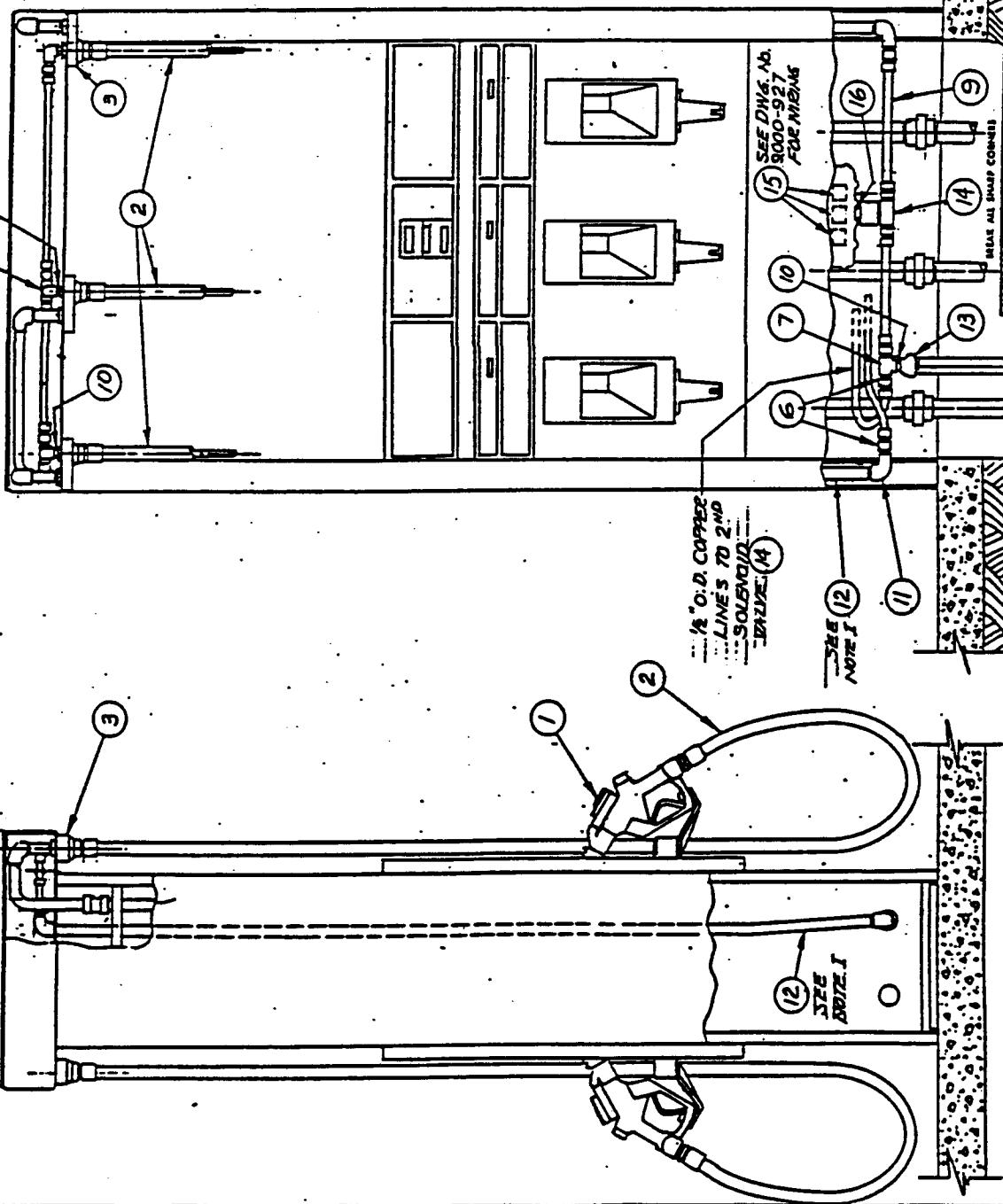
PARTS LIST		CAMARO ENGINEERING, INC. SYSTEMS, HEALY DISPENSING SYSTEMS
ORIGINAL ISSUE	REVISIONS	DATE 1-23-72
FORWARD ON	BACK ON	DATE 1-23-72
FRACTIONAL	DECIMAL	DATE
4 MM	.157	400
MATERIAL	ALUMINUM	400
WEIGHT	1.00	400
FINAL PROTECTIVE FINISH	COAT	400
	NO RUST	400
	SMOOTH	400

BREAK ALL SHARP CORNERS	
ITEM #	DESCRIPTION
1	FRONT PANEL
2	FRONT PANEL
3	FRONT PANEL
4	FRONT PANEL
5	FRONT PANEL

— REFERENCE CODES —
THIS EQUIPMENT TO BE INSTALLED IN ACCORDANCE
WITH NFPA-70 AND AUTOMOTIVE & MARINE
SERVICE CODE NFPA-30A.

Executive Order G-70-70-AC

Figure 4-F
Heavy Vapor Recovery System with Central Vacuum Unit
Typical Installation of Dispenser Components
With Multi-Product Dispensers



PARTS LIST			
ITEM	DESCRIPTION		
A-1	ITEM 3 H45 C160R	QTY	1
B-1	ADD ITEM 1515-2-16	QTY	1
1	NOZZLE	QTY	200X 02
2	CO-AXIAL HOSE (19 FT MAX)	QTY	400
3	HOSE ADAPTER	QTY	1
4	14-20-38 HEX HD BOLT	QTY	1
5	14-24 FLAT WASHER	QTY	1
6	1/2" O.D. COPPER TUBE	QTY	1
7	1/2" CLOSE NIPPLE	QTY	1
8	1/4" ELBOW (GALV)	QTY	1
9	1/2" O.D. COPPER TUBE	QTY	1
10	1/4" TEE (GALV)	QTY	1
11	1/4 X 1/2" REDUCING ELBOW (GALV)	QTY	1
12	1/2" SBD. TO 1/2" FPT (GALV)	QTY	1
13	1/4 X 1" REDUCING COUPLING (GALV)	QTY	1
14	1/2" SOLVENTO VALVE	QTY	1
15	SEE DIAG. NO. 5000-927 FOR MEAS.	QTY	1
16	SOUR STATE RELAY	QTY	1
17	1/2" NOZZLE	QTY	1
18	1/2" O.D. COPPER TUBE	QTY	1
19	1/2" SBD. TO 1/2" FPT (GALV)	QTY	1
20	1/2" SBD. TO 1/2" FPT (GALV)	QTY	1

REVISIONS	HEAVY SYSTEM CONVERSION		CAMARO WORKING, INC.
ITEM	MULTI-PROD.-DISP		HEALY SYSTEMS, INC.
ADD:	CENTRAL VAC. UNIT		INC.
ITEM 3 H45 C160R	C 6		AMERICA
ITEM 1515-2-16	1-125G		CODE
	14 NO. 100-1		PRINTED
	14 NO. 100-2		SCALE

DO NOT SCALE PER DRAWING

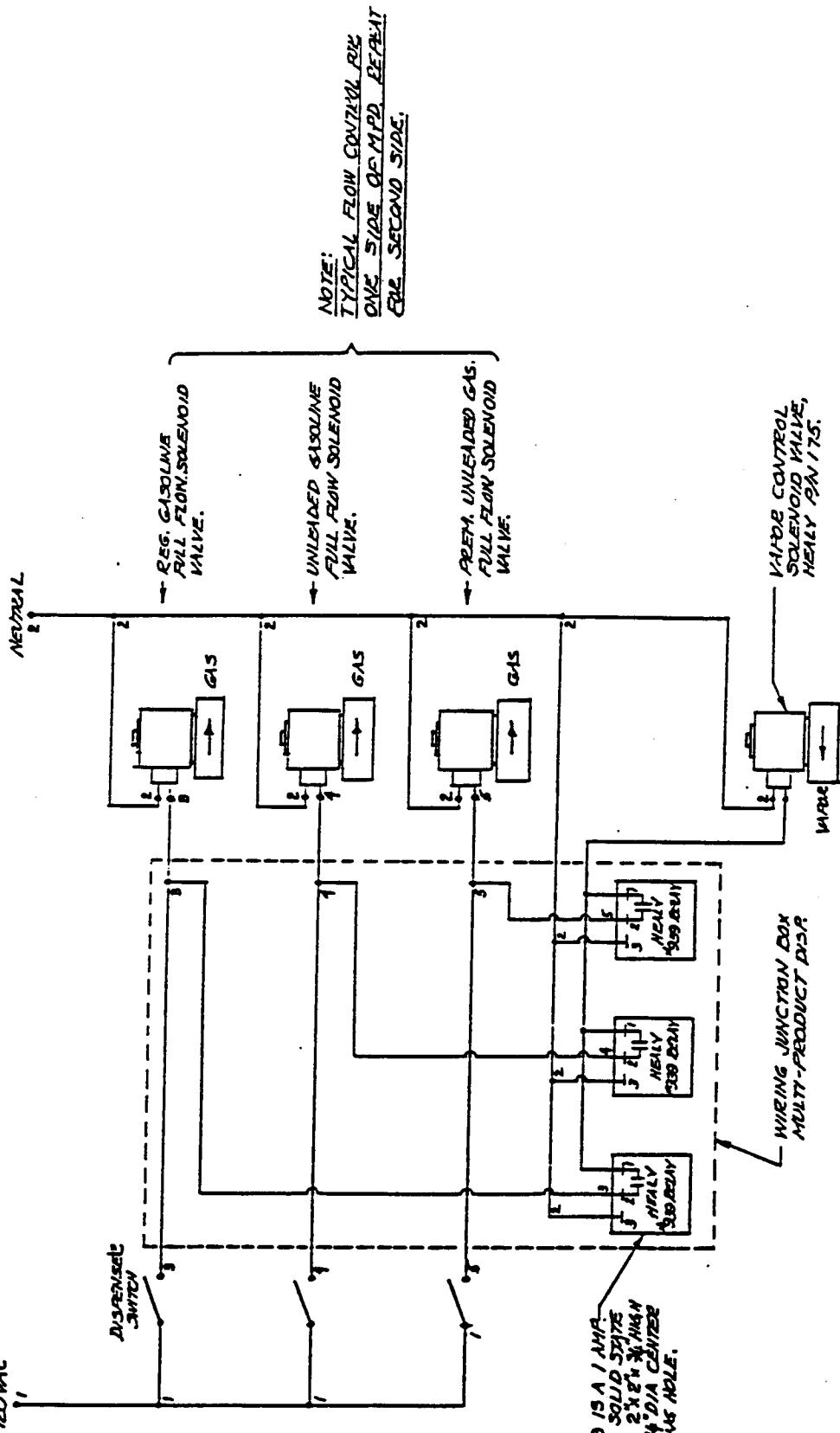
ORIGINAL ITEM		SMALL LOWMELLS LSCHE	
FRACTION	PERCENTAGE ON	ITEM 1515-2-16	ITEM 1515-2-16
DECIMAL	AMOUNT	ONE	ONE
0.14	0.14	0.14	0.14
VISUAL		SHIMMED	SHIMMED
TRIMMING		C.E. INC.	C.E. INC.
ANODICITY FINISH			

- 1 - 1/2" PIPE BY INSTALLED (2' PEEL APPROX. 7 FT. L.)
- 2 - REMOVE EXISTING HOSE OUTLET & WIRE FROM COVERS.
- 3 - INSTALL C. HAVE ADAPTERS & CONNECT TO HEAT GASOLINE.
- 4 - INSTALL A. THE PIPE FITTINGS & 1/2" O.D. COPPER FITTINGS AS SHOWN. MODIFIED TO ANTI RUN DIRECTLY OVER A PORT IN C.G.U.
- 5 - DO NOT KNOCK 1/2" O.D. TUBE WHEN BENDING.

Executive Order 6-70-70-AC

Figure 4-G
Healy Vapor Recovery System with Central Vacuum Unit
Wiring Instructions for Multi-Product Dispensers

120VAC



Revision	
Rev	Date Issued
1	DEC. 1968

120VAC	AMPS
1	15
JAN	4/5/68

DO NOT ECAUSE THIS DRAWING	
BEWARE ALL SHARP CORNERS	
UNLESS OTHERWISE SPECIFIED	
TOLERANCES ON	
FRACTIONAL	INCHES
0.1/16	0.1"
0.1/8	0.125"
0.1/4	0.25"
0.1/2	0.50"
0.1/1	1.00"
MATTEFINES	
HEAT TREATMENT	
CUT FINISH	
FINAL PROTECTIVE FINISH	
SCAL	NO. 100.
SCAL	CON
SCAL	TEST
SCAL	CP

WIRING DIAGRAM
FOR CONTROL OF
1/2" HEALY VAPOR LINE
IN MULTI-PRODUCT DISPENSER C 9000-927

CAMBRIDGE ENGINEERING, INC.
HEALY SYSTEMS, INC.
Cambridge, Mass., U.S.A.
Cambridge, Mass., U.S.A.